Municipal Water Supply: Source Development and Regulatory Considerations

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DEPARTMENT OF ECOLOGY
State of Washington

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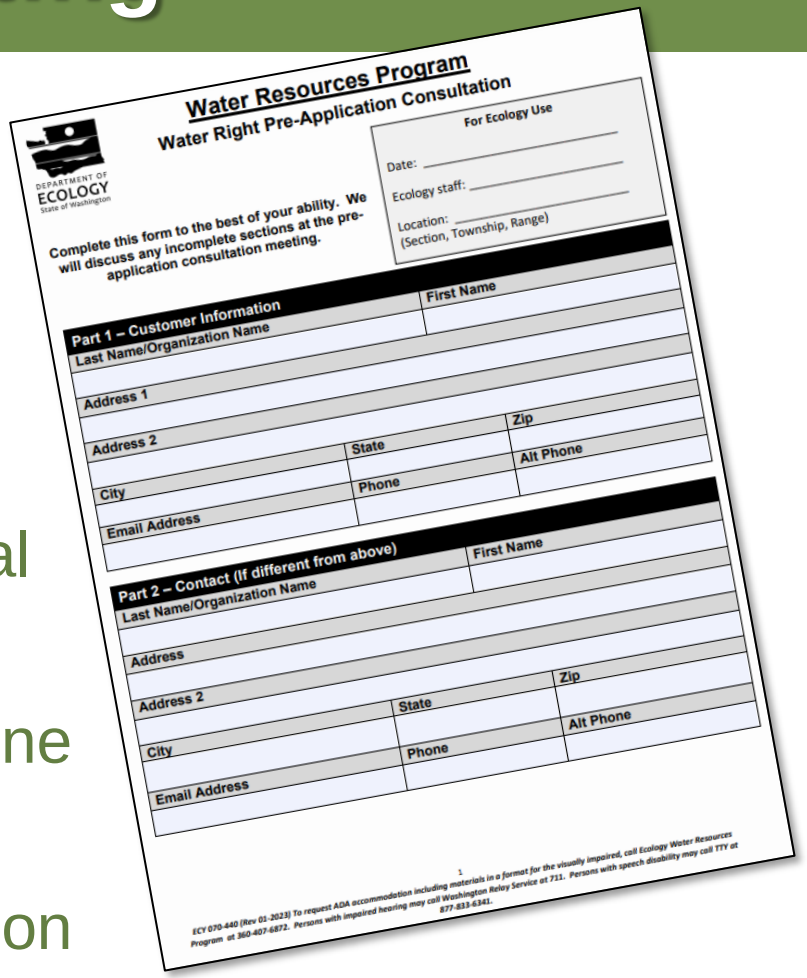
Aspect CONSULTING

Pre-Application Meeting

Meet with Ecology staff <u>before</u> paying fees and filing an application

- Fees are non-refundable
- Ecology can weigh in on potential red flags/discuss project viability
- Get realistic expectation of timeline
- Share what info is likely to be needed to process your application
- Ecology provides Technical Assistance



Water Resources Program

Water Right Pre-Application Consultation

DEPARTMENT OF ECOLOGY State of Washington

For Ecology Use

Date:

Ecology staff:

Location: (Section, Township, Range)

Complete this form to the best of your ability. We will discuss any incomplete sections at the pre-application consultation meeting.

Part 1 – Customer Information

Last Name/Organization Name | First Name

Address 1

Address 2 | State | Zip

City | Phone | Alt Phone

Email Address

Part 2 – Contact (If different from above)

Last Name/Organization Name | First Name

Address

Address 2 | State | Zip

City | Phone | Alt Phone

Email Address

ECY 070-440 (Rev 01-2023) To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

Water Right Permitting

Application and fee submitted to Ecology

- Publication requirements
- Permitting and Technical Review
- Four-Part Test
  - Is proposed use beneficial?
  - Is water legally and physically available?
  - Will existing (senior) users be impaired?
  - Will proposed use be detrimental to the public interest?

Permitting Review

Four-Part Test

- Is proposed use beneficial?
- Is water legally available?
- Will proposed use be detrimental to the public interest?

- Verify location/legal description of POU and POW/POD

Permitting Review

Legal Availability

- Authorized quantities (Qi, Qa), are they reasonable?
- Water right priority date
- Instream flow rules, groundwater management subareas, Federal flow targets (Chapter 173 WAC)

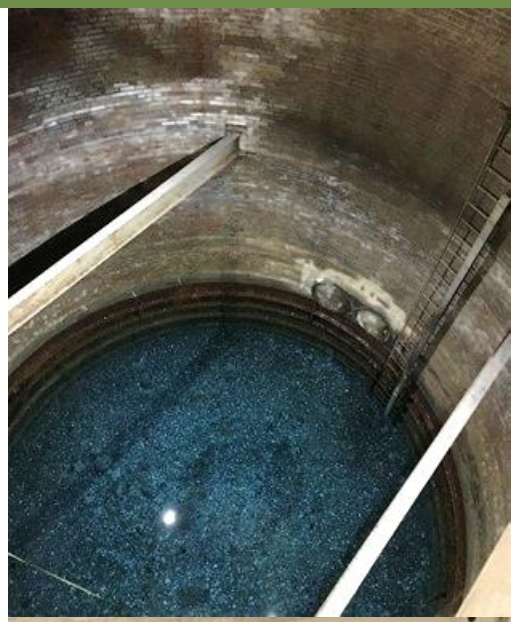
DEPARTMENT OF ECOLOGY
State of Washington

STATE OF WASHINGTON
FINAL
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

Technical Review

Four-Part Test

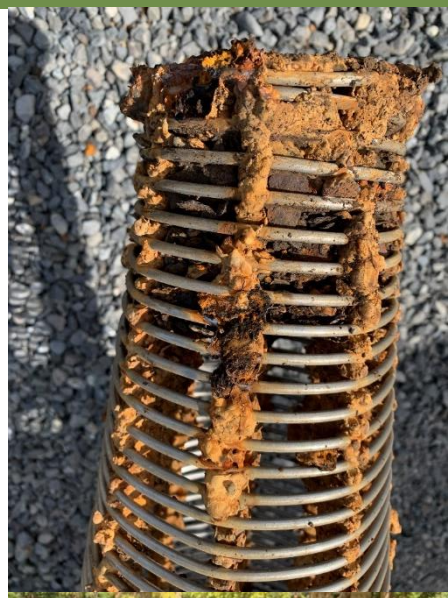
- Is water physically available?
- For change applications look at same body
- Will existing (senior) users be impaired?
    - Impact does not always equal impairment



Technical Review

Physical Availability

- Well yield (gpm)
- Specific capacity (gpm/ft drawdown)
- Aquifer properties if known (T,K,S)
- Long-term groundwater trends
- History of well interference and/or protests
- Source Redundancy
- Water Quality



Preliminary and Temporary Permits

Preliminary Permit

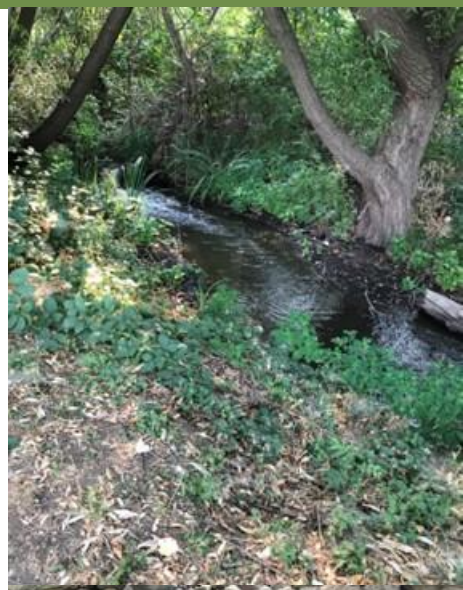
- If we need additional information to make a decision, Ecology can issue a preliminary permit
- Ecology directs what data needs are (aquifer testing, monitoring data, analyses)
- Can issue for up to 3 years
- Water can’t be put to beneficial use
- No guarantee that application will be approved

Temporary Permit

- Not the same as a preliminary permit

Permit Compliance

- Projects need to be pursued with due diligence and in good faith
- Your permit likely has Provisions
  - You need to know what they are and how you're going to meet them
  - You are responsible for meeting your provisions
- Ecology is currently revising the municipal water policy
  - Likely will be out this year



Hydrogeologic Investigation

Hydrogeologic Investigation

Project Development

- Water Right Due Diligence
- Hydrogeologic Investigation
  - Same Source of Water
  - Hydraulic Continuity
  - Impairment
  - Availability
  - Mitigation Suitability

Same Source of Water

What is Same Source?

Ecology Policy 2010:

Defining and Delineation of Water Sources

"To provide a consistent framework for determining the source of water in water resources permitting, rulemaking, and other administrative actions."

Technical Considerations of Same Source

Surface waters and/or groundwater in hydraulic connection, meeting the following four conditions:

1. **They share a common recharge area.**
2. **They are part of a common flow regime.**
3. **They are separable from other water sources by effective barriers to hydraulic flow.**
4. **They are an independent water body for the purpose of water right administration, as determined by Ecology.**

Technical Considerations of Same Source

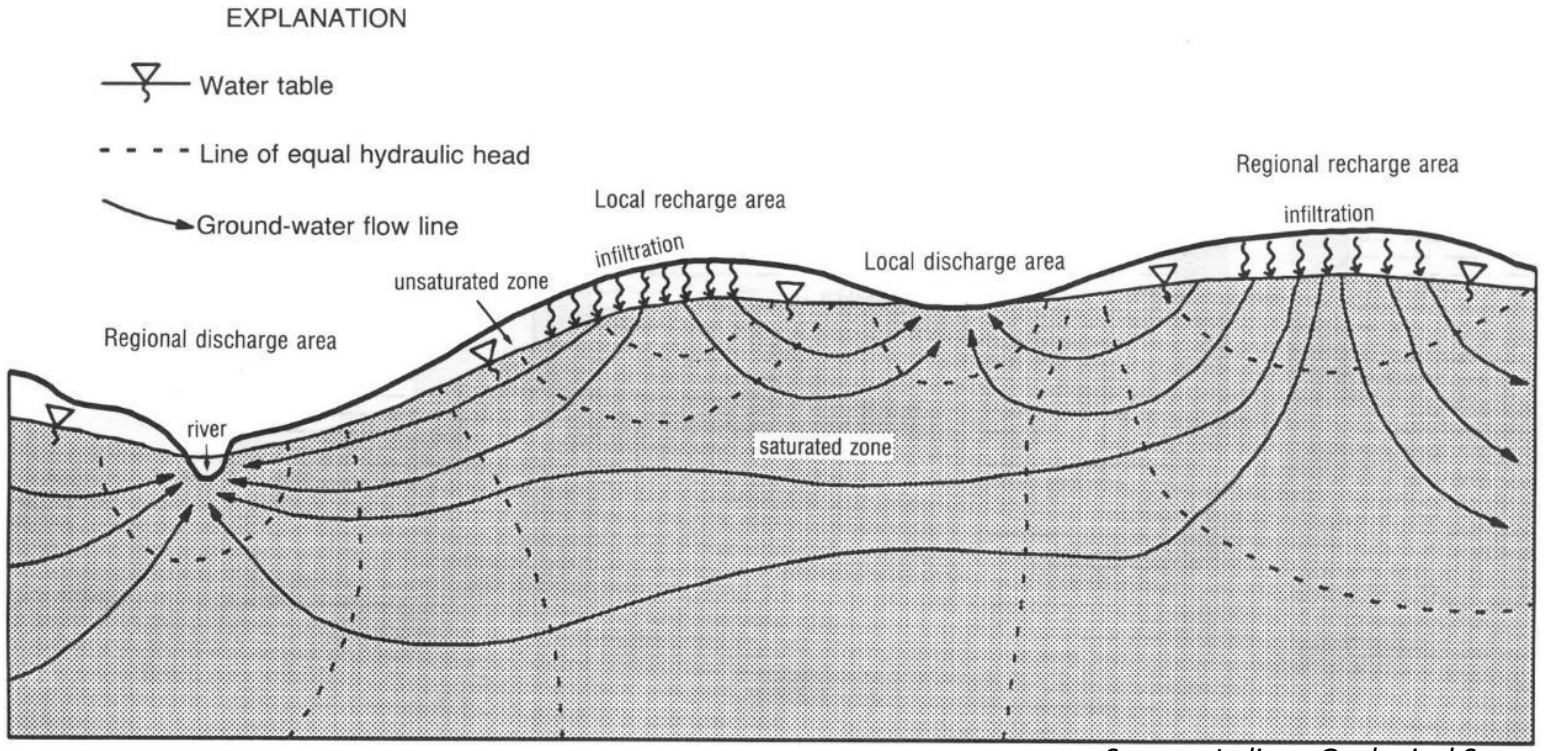
Series	Group	Formation	Member	Isotopic Age (m. y.)	Magnetic Polarity
Miocene	Columbia River Basalt Group	Saddle Mountains Basalt	Lower Monumental Member	6	N
			Ice Harbor Member	8.5	
			Basalt of Goose Island		N
			Basalt of Martindale		R
			Basalt of Basin City		N
			Buford Member		R
			Elephant Mountain Member	10.5	R,T
			Pomona Member	12	R
			Esquatzel Member		N
			Weissnefels Ridge Member		
			Basalt of Slippery Rock		N
			Basalt of Tenmile Creek		N
			Basalt of Lewiston Orchards		N
			Basalt of Cloverland		N
			Asotin Member	13	
			Basalt of Huntzinger		N
			Wilber Creek Member		
			Basalt of Lapwai		N
			Basalt of Wahluke		N
			Umatilla Member	13.5	N
			Basalt of Sillusi		N
			Basalt of Umatilla Member		N
		Wanapum Basalt	Priest Rapids Member	14.5	
			Basalt of Lolo		R
			Basalt of Rosalia		R
			Roza Member		T,R
			Shumaker Creek Member		N
			Frenchman Springs Member		
			Basalt of Lyons Ferry		N
			Basalt of Sentinel Gap		N
			Basalt of Sand Hollow	15.3	N
			Basalt of Silver Falls		N,E
			Basalt of Ginkgo		E
			Basalt of Palouse Falls		E
			Eckler Mountain Member		
			Basalt of Dodge		N
			Basalt of Robinette Mountain		N
			Vantage Horizon		
		Grande Ronde Basalt (Frenchman Springs Member)	Member of Sentinel Bluffs	15.6	N_2
			Member of Slack Canyon		
			Member of Field Springs		
			Member of Winter Water		
			Member of Umtanum		
			Member of Ortley		
			Member of Armstrong Canyon		
			Member of Meyer Ridge		R_2
			Member of Grouse Creek		
			Member of Wapshilla Ridge		
			Member of Mt. Horrible		
		Grande Ronde Basalt (Picture Gorge Basalt)	Member of China Creek		N_1
			Member of Downey Gulch		
			Member of Center Creek		R_1
			Member of Rogersburg		
			Member of Teepee Butte		
			Member of Buckhorn Springs	16.5	
		Imnaha Basalt		17.5	R_2 / T / N_1 / R_1

Nomenclature of the Columbia River Basalt Group (from Reidel and others, 2002)

Hydraulic Continuity

What is Hydraulic Continuity?

"…the interconnection between groundwater (aquifers) and surface water sources."



Source: Indiana Geological Survey, Hydrogeologic Framework

Why is Hydraulic Continuity Important?

- **RCW 90.44.030**

  Chapter not to affect surface water rights.

  "…any underground water is part of or tributary to the source of any stream or lake"

- **RCW 90.54.020(9)**

  Full recognition shall be given in the administration of water allocation and use programs to the natural interrelationships of surface and ground-waters

- **Postema v. PCHB (2000)**

  Groundwater permits may be denied based on impacts on instream flows

- **Swinomish v. Ecology (2013)**

  Instream flow rights are entitled to impairment protection

- **Foster v. Yelm (2015)**

  Stream depletion must be mitigated with in-kind and in-time mitigation

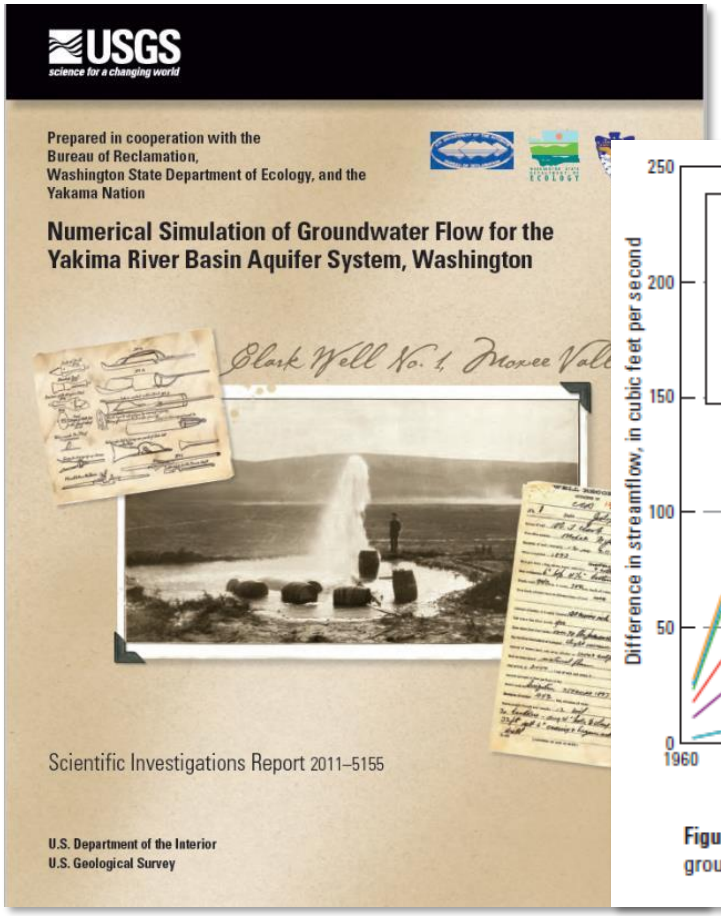
- **Hirst v. W. Wash. Growth Mgmt. Hearings Board (2016)**

  GMA requires consideration of exempt well impacts on instream flows

When is Hydraulic Continuity Important?

- New Appropriations
- Surface to Groundwater Transfers
- Impairment Analysis
- Mitigation Suitability
- Exempt Well Availability Determinations

Determining Hydraulic Continuity



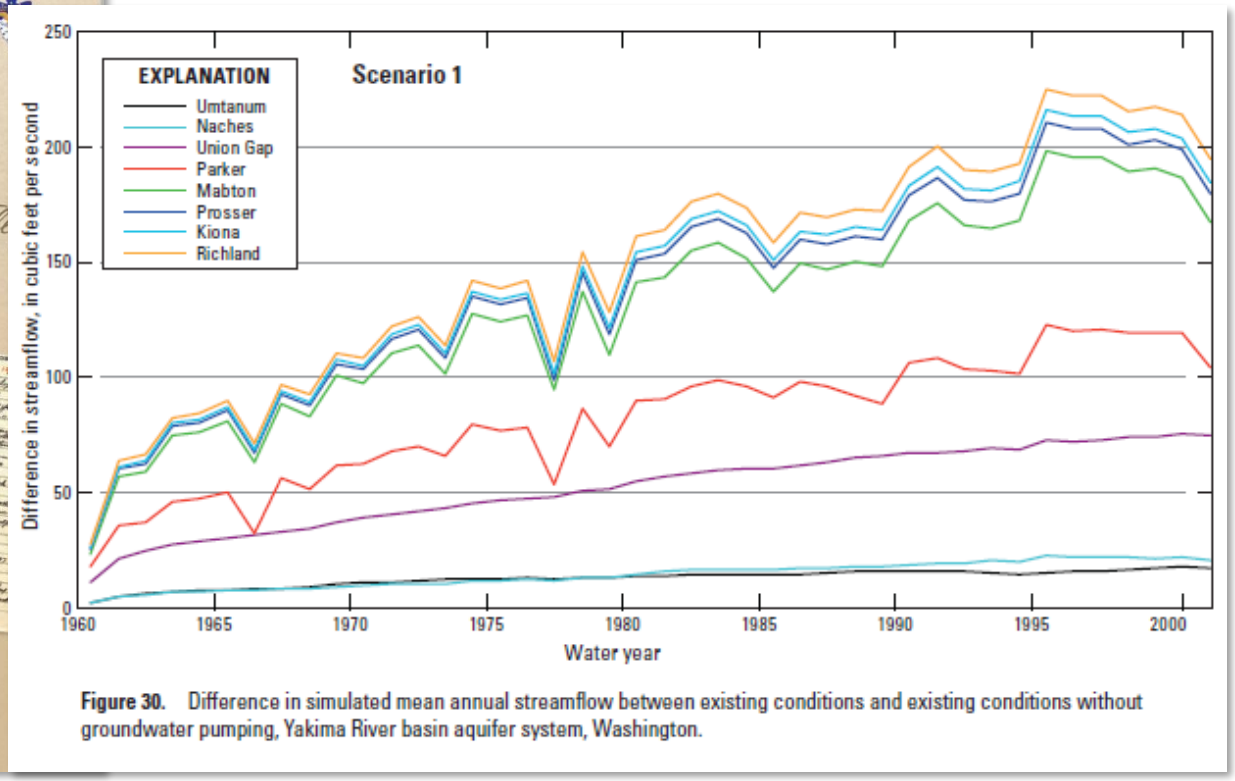


Figure 30. Difference in simulated mean annual streamflow between existing conditions and existing conditions without groundwater pumping, Yakima River basin aquifer system, Washington.

Conclusion - Groundwater and Surface Water in the Yakima River Basin are Connected…

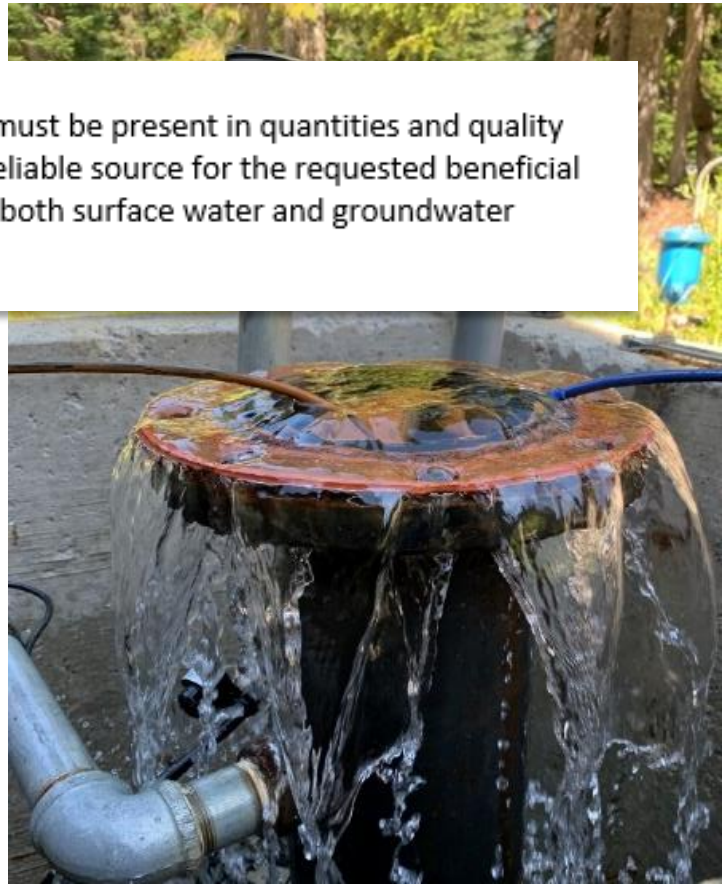
Source: USGS, Scientific Investigation Report 2009-5152

Water Availability

What is Physical Availability?

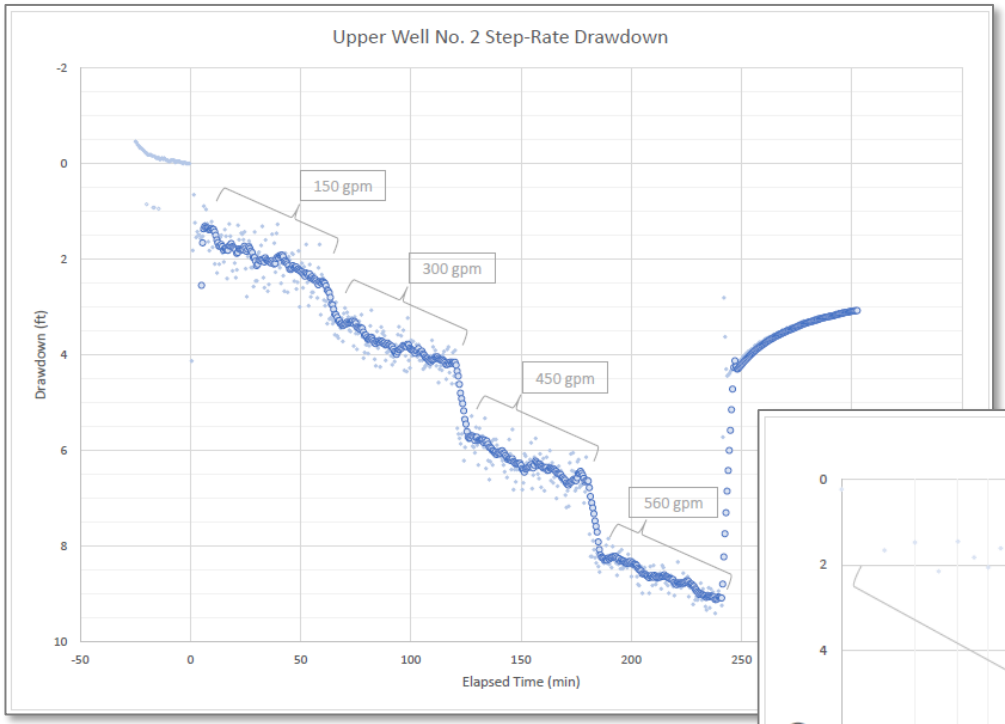
Physical Availability

For water to be physically available for appropriation, water must be present in quantities and quality and on a sufficiently frequent basis to provide a reasonably reliable source for the requested beneficial use or uses. An analysis of physical availability is required for both surface water and groundwater applications.

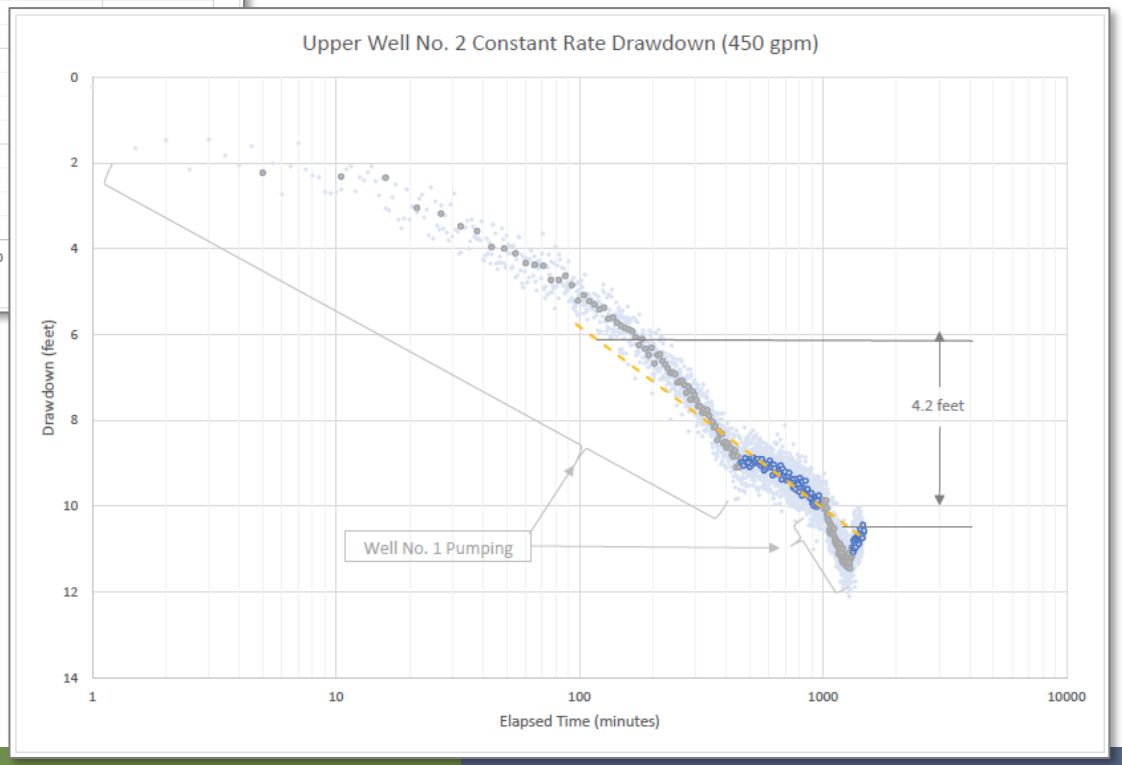


- **Well Yield**
- **Well Efficiency**
- **Source Redundancy**
- **Water Quality**

What is Physical Availability?



Pumping Tests



What is Legal Availability?

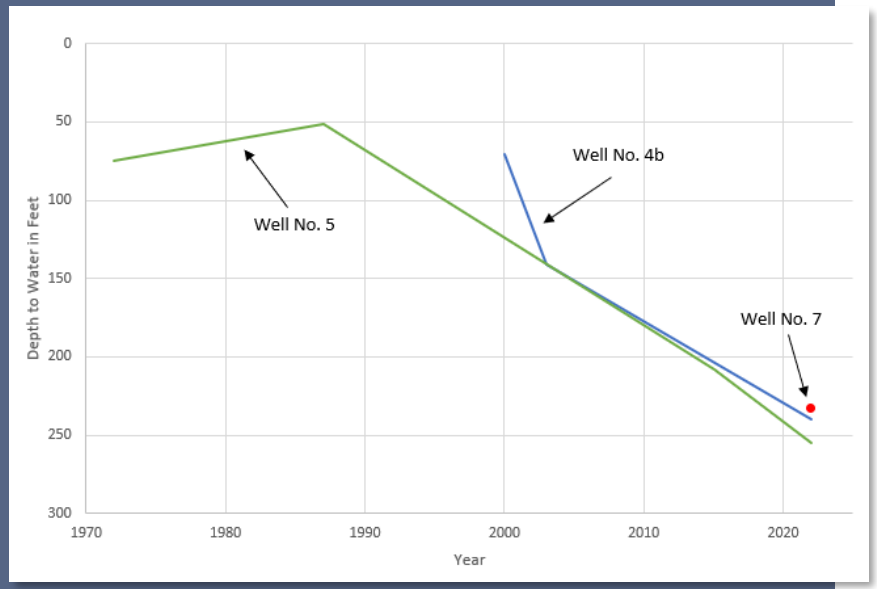
Legal Availability

To meet the legal availability test, the proposed appropriation may not withdraw and use water that is already "spoken for", such as water from sources that are protected by administrative rule or court order.

- **Authorized Water Right Quantities**
- **Water Right Priority**
- **Instream Flow Rules, Groundwater Management Subareas, Federal Flow Targets**
- **Impairment (RCW 90.03.290 and RCW 90.44.060)**
- **Long-term Groundwater Trends (RCW 90.44.130)**

Long-term Groundwater Trends

"…shall administer the groundwater rights…and it shall have the jurisdiction to limit withdrawals by appropriators of groundwater so as to enforce the maintenance of a safe sustaining yield from the groundwater body."



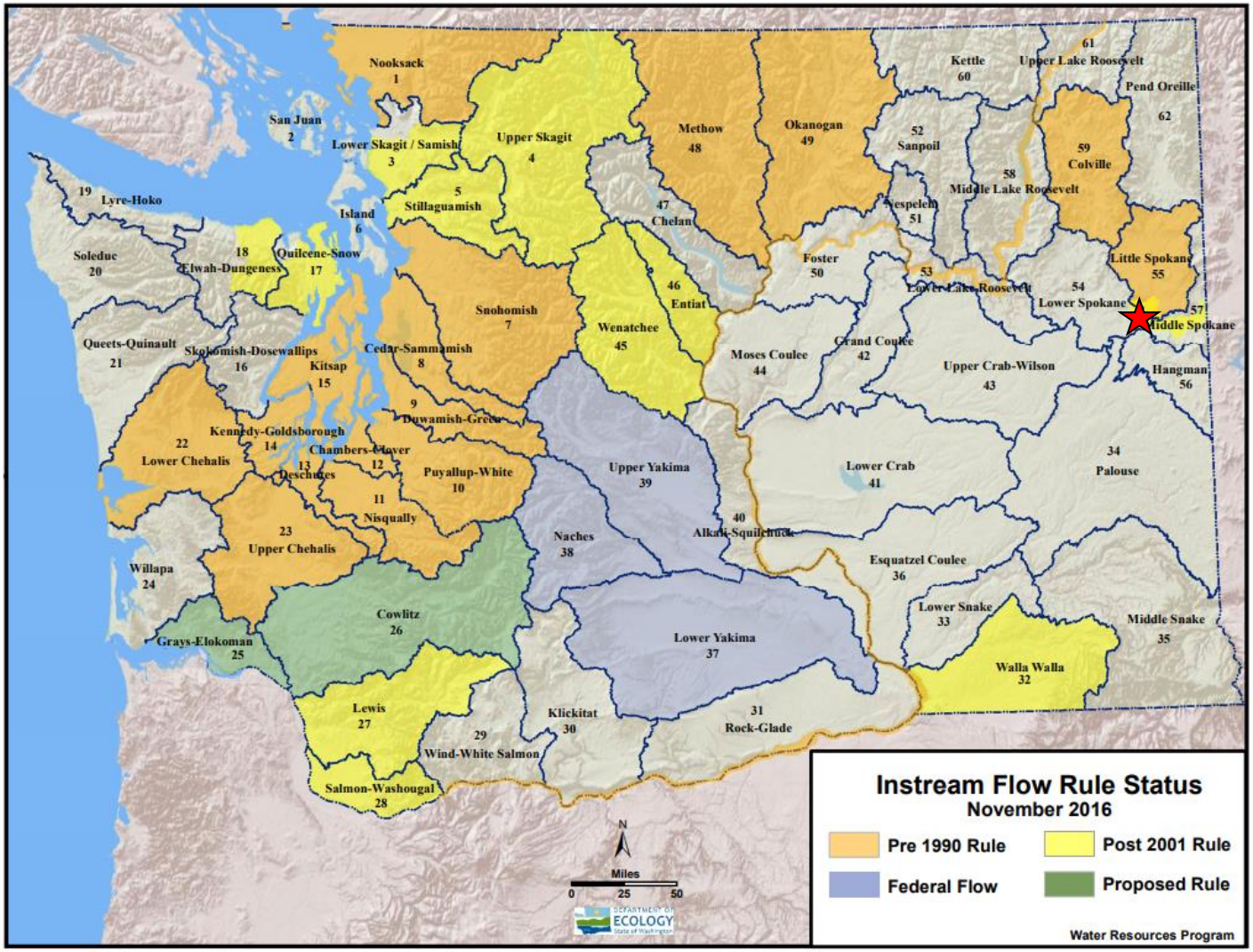
Impairment

What is Surface Water Impairment?

- **Native American Time Immemorial Water Rights**
- **Senior Water Rights**
- **Instream Flows**
- **ESA-Listed Species***
- **Water Quality (TMDL)***
- ***“Recency” Test****

* Under the Public Interest test

Instream Flow Rules



What Makes the Columbia Basin Unique?

- **Columbia Basin Project –** *Large amount of imported surface water. Over appropriation of natural groundwater. Commingling of natural and artificially stored groundwaters.*
- **Chapter 173-130A WAC –** *Odessa Groundwater Subarea Management Policy*
- **Chapter 173-134A WAC –** *Quincy Groundwater Subarea Management Policy*
- **Chapter 508-14 WAC –** *Columbia Basin Project - Groundwater*

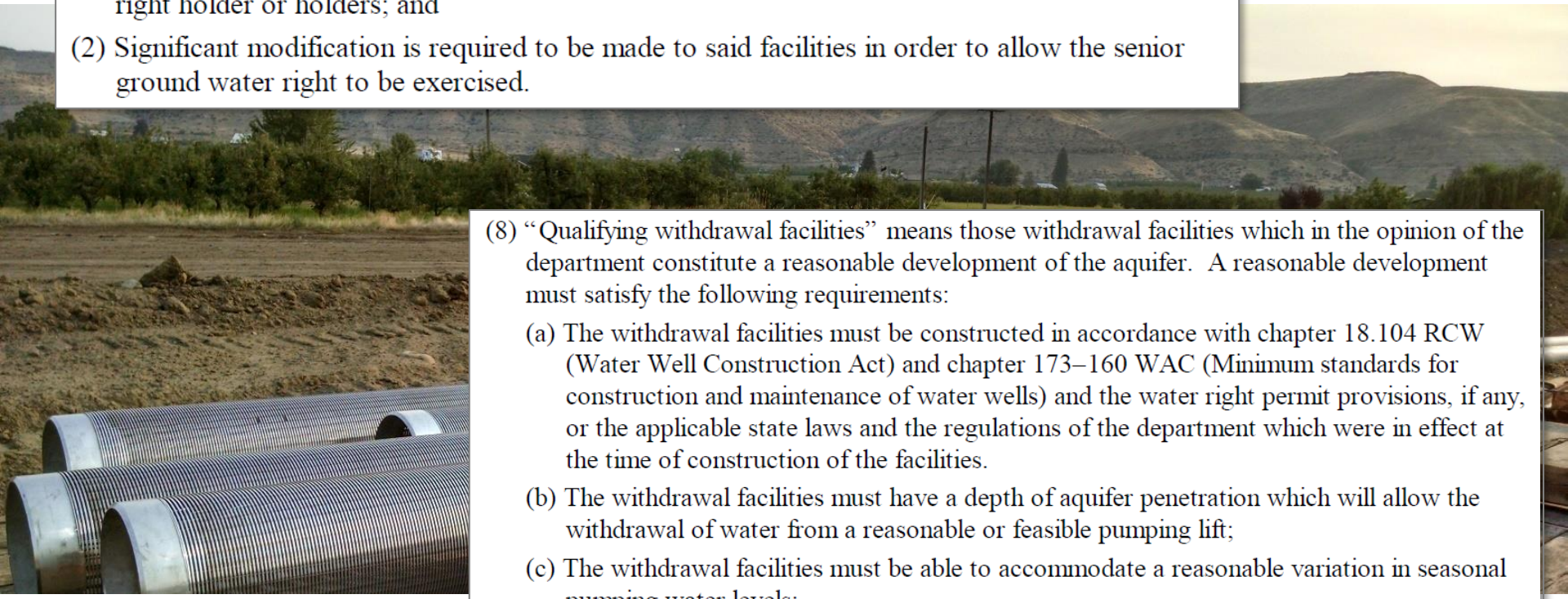
These factors contribute to increased management (and permitting) of groundwater resources.

What is Groundwater Impairment?

WAC 173–150–060 Impairment of water right. For the purposes of this chapter, a ground water right which pertains to qualifying withdrawal facilities, shall be deemed to be impaired whenever:

(1) There is an interruption or an interference in the availability of water to said facilities, or a contamination of such water, caused by the withdrawal of ground water by a junior water right holder or holders; and

(2) Significant modification is required to be made to said facilities in order to allow the senior ground water right to be exercised.



(8) "Qualifying withdrawal facilities" means those withdrawal facilities which in the opinion of the department constitute a reasonable development of the aquifer. A reasonable development must satisfy the following requirements:

(a) The withdrawal facilities must be constructed in accordance with chapter 18.104 RCW (Water Well Construction Act) and chapter 173–160 WAC (Minimum standards for construction and maintenance of water wells) and the water right permit provisions, if any, or the applicable state laws and the regulations of the department which were in effect at the time of construction of the facilities.

(b) The withdrawal facilities must have a depth of aquifer penetration which will allow the withdrawal of water from a reasonable or feasible pumping lift;

(c) The withdrawal facilities must be able to accommodate a reasonable variation in seasonal pumping water levels;

(d) The withdrawal facilities, including the pumping facilities, must be properly sized to the ability of the aquifer to produce water.

Mitigation Suitability

What is Mitigation?

"Mitigation means measures that offset adverse effects on a water source to eliminate impairment and/or detriment of the public interest"

Focus on: Foster v. Ecology

"Mitigation must be in time, in kind, and in place"

- **Ecology's focus sheet (Publication 20-11-083)**
- **Implications:**
  - Water Right Change Applications
  - Mitigation Packages
  - Water Banks
  - Overriding Consideration of Public Interest
  - Streamflow Restoration Projects

Focus on: Foster v. Ecology

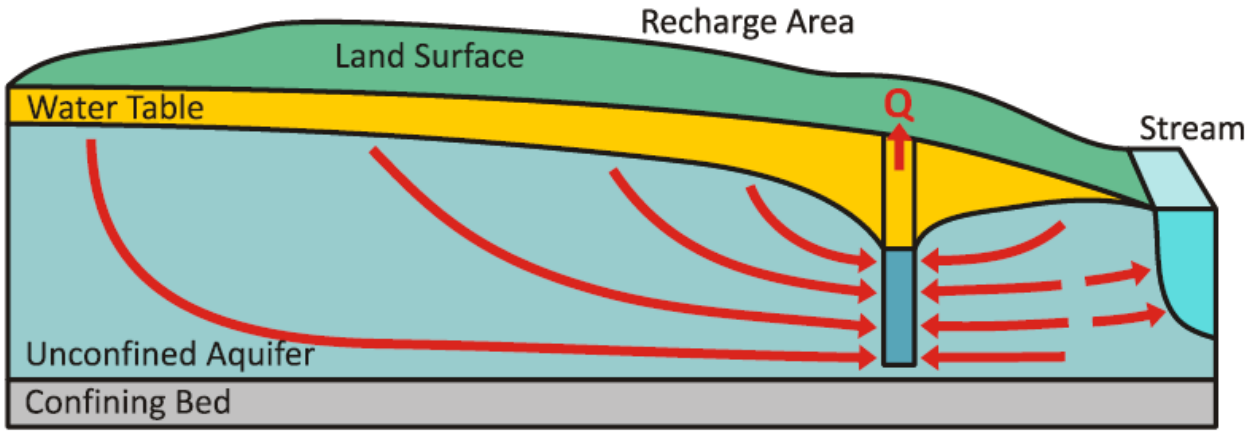
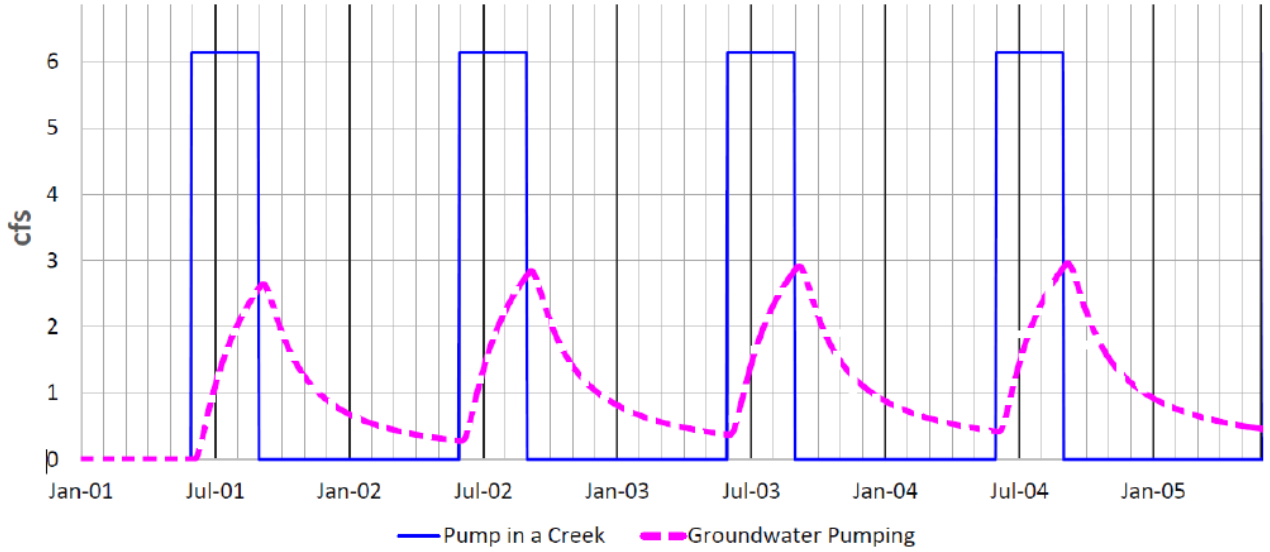


Figure 2. Effects of withdrawing groundwater from a well. 'Q' = withdrawal.



Ecology Publication 20-11-083

Questions?

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